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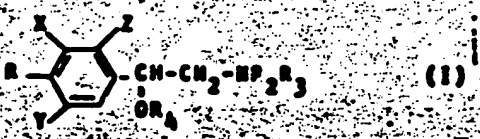
(54) Wachstumsfördernde Phenylethylamin-Derivate.

(57) Die Erfindung betrifft Phenylethylamin-Derivate der allgemeinen Formel I



(I)

in der die Reste R, R_1, R_2, R_3, X, Y und Z die in der Beschreibung angegebene Bedeutung haben und deren Verwendung als wachstumsfördernde Zusätze in der Tierernährung.

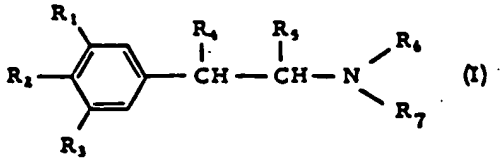
EP 0 103 830 A2

84-076585/13 B05 C03 TROP- 22.09.82
TROPONWERKE & GMBH *DE 3234-995-A
22.09.82-DE-234995 *(22.03.84)* A23k-01/16 A61k-31/13

Sympathomimetic phenethyl:amine derivs. - used growth promoters for animals e.g. cattle, birds or fish

C84-032714

The use of cpds. of formula (I) and their physiologically tolerable salts as growth promoters for animals is new.



(I)

(R_1, R_2 and R_3 are H, OH, alkoxy or hydroxymethyl;
R_4 is H or OH;
R_5 is H, opt. branched or cyclic alkyl or alkenyl, aryl, acyl or aroyl, the alkyl, alkenyl and aryl residues opt. being substd. by halogen, OH, alkyl, alkoxy, amino, opt. substd. phenyl or heteroaryl;
R_6 and R_7 are H, opt. branched or cyclic alkyl, alkenyl, aryl, acyl, aroyl, mono- or dialkylaminoalkyl, alkoxyalkyl, phenoxyalkyl or acyl, the alkyl, alkenyl and aryl residues opt. being substd. by halogen, amino, alkyl, alkoxy, OH, acylamino, opt. substd. phenyl or heteroaryl or NR_6R_7 is an opt. substd. pyrrolidine, piperidine, piperazine or morpholine residue).

Animal feeds and growth-promoting agents contg. (I) are also claimed.

USE

For promoting and accelerating growth and improving feed utilisation in healthy and diseased animals, including warm blooded animals such as cattle, pigs or sheep, fur animals and birds (e.g. poultry, cage birds), as well as cold-blooded animals such as fish or reptiles.

DETAILS

(I) are known cpds. with sympathomimetic activity.

Pref. R_1, R_2 and R_3 are H or OH, R_4 is OH, R_5 is H or CH_3, and R_6 and R_7 are H or 1-4C alkyl(opt. substd. by phenyl, phenoxy, hydroxyphenyl or methylenedioxyphenyl

(I) are generally added to feed or drinking water in a concn. of 0.01-50 (esp. 0.1-10) ppm.

EXAMPLE

A 15-day feeding trial is carried out in rats with various cpds. (I) including 1-(3,4-dihydroxyphenyl)-2-(1-methyl-2-(3,4-methylenedioxyphenyl)ethylamino)ethanol hydrochloride.

In rats fed a diet contg. 25 ppm test cpd., growth is 112%, feed intake 104%, and feed utilisation 92.9% of that of control animals.(24pp280DAHDwgNo0/0).

BC(7-D3, 7-D5, 7-D11, 7-E3, 10-A24, 10-B1A, 10-B1B, 10-B3B, 10-B4B, 10-D3, 12-L9)

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OWENS-ILLINOIS INC *DE 3329-659-A
16.09.82-US-418884 *(22.03.84)* A23j-01/18 C07g-07 C12n-09 C12n-11 C12p-21

Imparting enzyme activity to protein - by contacting denatured protein with immobilised enzyme inhibitor and crosslinking

C84-032764

Prodn. of a modified protein (I) having enzymatic activity imitating that of a selected enzyme (II) is effected by:
(a) immobilising an inhibitor of (II) on a solid carrier;
(b) partially denaturing a native protein (III); and
(c) crosslinking (III) in the presence of the immobilised inhibitor.

USE/ADVANTAGE

The process can be used to produce enzymatically active substances from inexpensive proteins, e.g. in cases where the corresp. natural enzyme is in short supply or expensive to isolate. The prods. may be used e.g. as biological catalysts.

DETAILS

(III) may be e.g. bovine serum albumin (BSA) or an enzyme whose activity is to be modified, e.g. glucoamylase. The inhibitor is pref. immobilised on a carbohydrate carrier (esp. agarose gel) by covalent bonding.

(III) may be denatured thermally or with an aq. soln. of a chemical denaturant, esp. an inorganic acid, water-miscible organic solvent or inorganic salt.

The process may be carried out by passing a soln. of the partially denatured (III) through a column of the immobilised inhibitor, followed by a soln. of a crosslinking agent.

EXAMPLE

A 1% BSA soln. was injected into a column of L-tryptophan/agarose gel satd. with 0.01M acetate buffer (denaturant, pH 4.4). A mixt. of 20 ml glutaraldehyde soln. (8%) and 25ml acetate buffer (pH 4.4) was circulated through the column for 90 min.

The prod. was eluted with glycine-HCl buffer (pH 3.0) and ppted. with Tris buffer (pH 7.5). The prod. had esterase activity when tested on α-benzoyl-L-arginine ethyl ester.(91pp367DAHDwgNo0/0).

B(4-B2C, 4-B4A) D(5-A2)

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